



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,572	03/29/2004	James F. Detry	H0002921DIV1 (1016.115210)	2070
128	7590	03/22/2006	EXAMINER	
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			MITCHELL, JAMES M	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

**Office Action Summary**

Application No.

10/811,572

Applicant(s)

JAMES F. DETRY

Examiner

James M. Mitchell

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 October 2005.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19, 30, 32-35 and 45 is/are pending in the application.  
 4a) Of the above claim(s) 5-8 and 10-13 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☐ Claim(s) 1-4, 9, 14, 16-19, 30, 32, 33 and 45 is/are rejected.  
 7) ☒ Claim(s) 15, 34 and 35 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 7/26/2004.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. This office action is in response to applicant's amendment filed October 18, 2005.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 9 and 16, 30-33 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Rohm et al. (U.S. 6,396,154).

4. Rohm (Fig. 1, 2) discloses:

(cl. 1, 30, 32, 45) a method of attaching two portions of wafers, the method comprising: providing a first (1) and second wafer (23) having a first (i.e. top portion) and second (i.e. bottom portion) side, creating at least one pit (e.g. define by ring 23) into the first side of the second wafer to define at least two pillars (P21, P22), wherein the pit has a perimeter with perimeter walls (23), and at least two pillars extend up from a bottom of the pit and are spaced inward from the perimeter walls of the pit; adapting the pillar to conduct an electric signal (B22); providing a contact pad (P12) on a first side of the first

Art Unit: 2813

wafer; aligning the first and the second wafer such that the pillar corresponds to the contact pad (Fig. 1-2); attaching the first wafer to the second wafer;

(cl. 2, 3) providing an inductor (222) that is an electronic component on the second wafer that is electrically connected to the contact pad on the first wafer via one of the pillar (Fig. 2);

(cl.4) wherein the inductor is provided on the first side of the second wafer (Fig. 1);

(cl. 9) and a chip includes a transistor ( i.e. "signal processing")

(cont. cl. 30) and an electronic device having first and second leads (14);

(cl. 16, 33) applying metallization (221,222) to the first side area of defining spiral metallization and therefore inductive elements, and providing electrical connection (i.e. 13,B22) to leads and first regions ;

(cont. cl. 32) with pad portion on portions of wafer; and second region of being substantially isolated (e.g. pillars separated)

(cl. 18, 19) with the first and second wafer forming a sealed wafer (Col. 4, Lines 47-49) by adhesive ("resin"; Col. 2, Lines 47-49);

(cl. 35) applying a dielectric layer (17) over the metallization.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14 rejected under 35 U.S.C. 103(a) as being unpatentable over by Rohm et al. (U.S. 6,396,154) in combination with Winer et a. (U.S. 6,525,922).

7. Rohm discloses the same invention except that seal alternatively is disclosed as ultrasonic connection, Winer shows that ultrasonic and reflow (Col. 3, Lines 6-8) form equivalent structures known in the art known in the art. Therefore, because these two seals structures are art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute reflow for ultrasonic to attach wafers,

8. Claims 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over (U.S. 6,396,154).

9. Rohm does not appear to show its pillar slanted, however applicant has not disclosed that that his limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such the slanted walls would have been obvious since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

***Allowable Subject Matter***

10. Claims 15, 34 and 35 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious adapting pillars to conduct an electric signal by doping the pillar, or forming insulation over the metallization corresponding to an inductor including all the limitations of the independent claim.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2813

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art discloses in: Johnson (U.S. 2002/0057173) discloses the use of forming metallization on a pillar to form an inductor; Salatino (U.S. 5,915,168) the use of removing material from wafer to form pillars.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jmm  
March 19, 2006

  
CARL WHITEHEAD, JR.  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800